ARMY ENTERPRISE WORKFORCE PERFORMANCE SYSTEM (eAWPS)

A TOOLBOX FOR ENABLING ARMY BUSINESS SITUATIONAL AWARENESS

"Transformation of our business, resourcing and acquisition processes promotes the long term health of the Army. It will free human and financial resources that can be better applied toward accomplishing our warfighting requirements and accelerating other aspects of transformation".

Army Posture Statement 2006

The Enterprise Army Workload Performance System – enabling Army Business Transformation through Enhanced Situational Awareness

The Army Business Transformation Vision describes how the Army in the future applies proven business principles to the Army's business problems, and achieves efficiencies. The means to achieve those efficiencies are embedded in the Business Transformation Strategic Framework. The three focus areas: Continuous Process Improvement (CPI), Organizational Analysis and Design (OA&D), and Situational Awareness, are formed of the best practices and methods of American enterprise, and will provide the boundaries, structure, and standards to help ensure our success.

In particular, Situational Awareness is the ability to generate actionable knowledge through the use of timely and accurate information about the Army enterprise, its processes, and external factors. The imperative to develop actionable knowledge is a key driver of Army Business Transformation (BT). Enterprise solutions provide the technology enablement necessary to support Situational Awareness, driving toward effective and efficient business operations. Enterprise solutions represent the vertical and horizontal alignment of people, processes, and technology across organizational and functional boundaries. eAWPS brings such enterprise solutions capability to the Army.

Why the Army Needs to Better Enable Business Situational Awareness

The US Army faces significant challenges to its ability to continue to field and equip the world's most potent land forces. After five years supporting substantial force commitment in Afghanistan and Iraq, and with the likelihood of continuing large troop deployments, the strains on Army business processes and people are becoming more evident. At the same time the Army is undergoing a top-to-bottom transformation – especially within the

organization structure, equipping, and doctrine of its fighting forces. These challenges are exacerbated by expected limited future financial resources.

Many expected and unexpected consequences from Army overseas commitments have led to numerous challenges that must be addressed, including:

- the backlog of equipment requiring repair or replacement is at historically high levels due to the extreme combat conditions
- the slow pace of transformation to the new Army Combat System and new modes of organization and deployment because of technical and resource difficulties
- frequent unit rotations place real stresses on soldiers and units
- growing costs of retaining personnel as the Army must offer higher financial incentives for recruiting and retention, especially for increasingly-mobilized Reserve components
- the growing mismatch between the capabilities required in the force and the skills and abilities soldiers are trained to master.

In such a strenuous and dynamic environment, Army leaders have recognized that a major emphasis must be placed on improving the non-deploying organizations and capabilities of the Warfighting Support Army.

A force as large as the US Army requires a significant business operation to support and sustain war-fighting capabilities. Equipment, repair parts, and munitions must be designed, tested, procured, transported, stored, maintained, repaired and retired. Consumable supplies, especially food and fuel, must be sourced and delivered to the troops who will use them. Soldiers must be recruited, trained, paid, housed and (along with their families) provided a range of support services from health care to day care to recreation. The current communications and information technology infrastructure that underlies the Army's business processes is comprised of over 1700 systems, effective in their functional capacity, but not designed to work together. As a result, managers and leaders cannot access the actionable

cross-enterprise knowledge they require in order to best respond to and sustain the capability of our 21st century Warfighting Army.

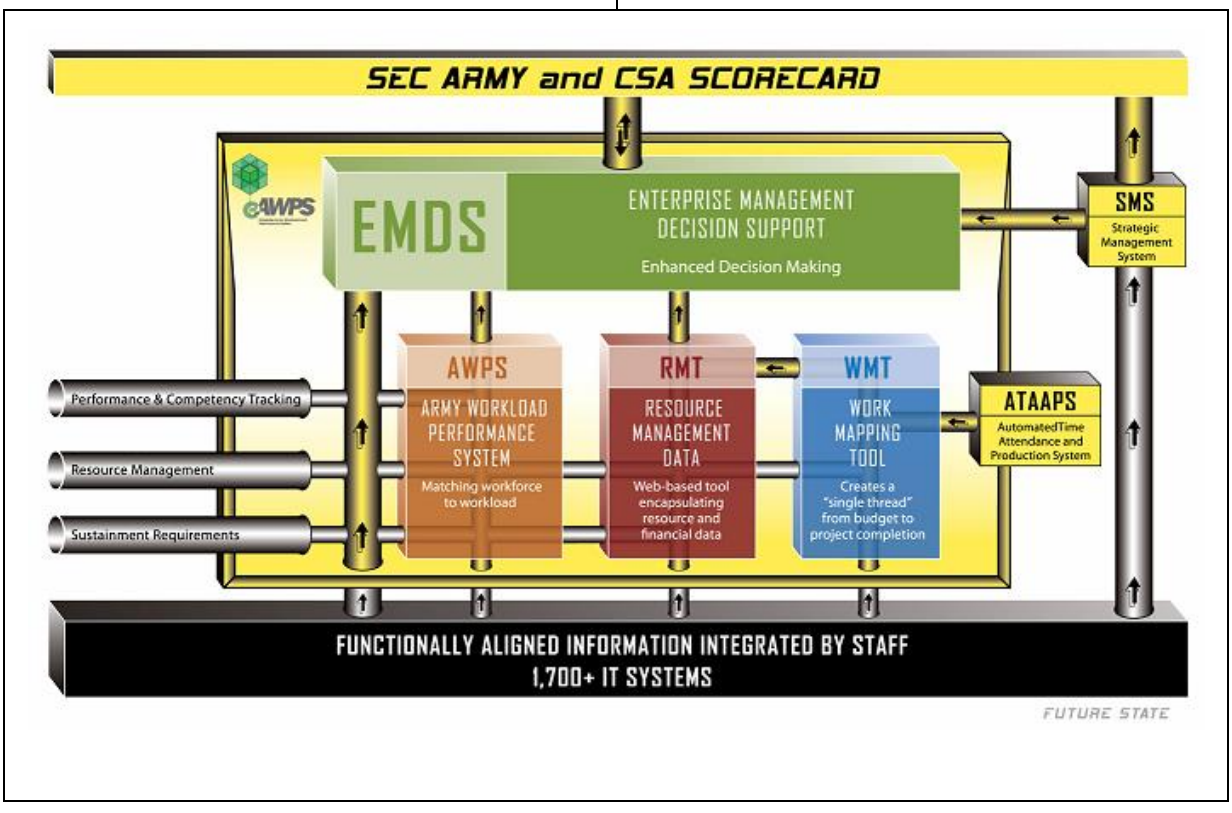
In order to achieve more rapid, efficient, and effective support of the warfighter, Army business processes need enhanced Situational Awareness to become much more responsive to the requirements generated by a very dynamic operational environment. Improved performance in turn requires that operational and resource information from these critical business processes become more robust, accessible, timely, and accurate to enable decision makers at all levels to plan and execute business plans to produce the required support outputs. Achieving this enhanced Situational Awareness, requires the Army to pursue an aggressive strategy in improving organizational design and performance, while enhancing data architectures and interfaces to enable data-sharing and integration, to reengineer business and production processes while eliminating waste and incorporate industry best practices, and to develop systems of accountability-based metrics to ensure continuing high performance.

The Army's eAWPS Tool Box

To address the above requirements, the Army has developed a multidimensional strategy to strengthen the performance of the Army support business processes and to develop stronger links between the demands of the operational forces and the funding and performance priorities of the support forces and organizations. Under the direction of the Secretary of the Army and the Chief of Staff, the Deputy Undersecretary of the Army for Business Transformation (DUSA(BT)) has assembled an array of analytic and programmatic capabilities to enhance Army performance and responsiveness to Warfighter demands. The **eAWPS** program is the integration of various modules and program implementations to accomplish the purposes outlined above. The modules are:

- Enterprise Management Decision Support (EMDS)
- Army Workload and Performance System (AWPS), both Depot and Tactical configurations
- Resource Management Tool (RMT)
- Work Mapping Tool (WMT)

This 'tool box' has been assembled from a foundation of resource management tools, work mapping, enterprise decision-support, and work and workforce analysis and forecasting. This collection



of tools together, provides decision makers the capability for enterprise-wide actionable knowledge and is known as the Enterprise Army Workload Performance System (eAWPS). The tools comprising eAWPS are now or will soon be capable of supporting the other Focus Areas of Business Transformation. Their breadth of data and actionable knowledge will support a basis for solid Organization Analysis and Design. eAWPS will drive a new capability for measuring and analyzing processes under the Army's Lean Six Sigma Methodology, leading to continuous process improvement.

The Army's Resource Management Tool (RMT) is improving visibility, of financial and manpower data. Those tools and others will link requirements, resources, outcomes and decisions through the soon to be deployed Executive Management Decision Support (EMDS) system. All together, this suite of IT tools is already beginning to support decision makers with actionable, knowledge, enhancing business Situational Awareness. Some components of eAWPS have been fielded and have been benefiting business operations for several years. For instance, The Army Material Command has used AWPS since 1999 in managing heavy industrial processes.

The Army Workload and Performance System: Brief Description

The Army Workload and Performance System is a tool for analyzing, predicting and managing the use of manpower and other resources in the production of Army outputs. AWPS uses data drawn from existing management systems that collect information on time worked and activities accomplished, production events and resources scheduled, workforce characteristics and budgets. AWPS is based on the tested principle that almost any work process can be broken down into its component and described by means of a detailed work-breakdown structure (WBS). Once that WBS is defined and validated, the ordering and dependency of the individual elements can be established and associated with the inputs (labor, parts, supplies, etc.) and outputs from each element. Well-established value engineering practices can then be applied to develop schedules and forecasts for production, cost and labor utilization. In addition, once the basic AWPS model for a process has been built, it provides the data necessary for successful process improvements using LEAN and Six Sigma, and is well suited to use as a simulation model to test alternative resource and production solutions.

AWPS has been designed to place little or no additional burden on most users. However, to realize the full capabilities of AWPS, AMC has found great value in making substantial investments in training of managers to make better use of the underlying concepts and methods of earned value management and similar practices. Further, the system has been designed and is being implemented as an asset to managers at a variety of organizational levels and functions:

Shop foremen and supervisors	AWPS provides detailed information and tools to schedule work, monitor performance and manage workforce
Product managers, site managers	AWPS provides detailed information on project status, earned value, bottlenecks and emerging problems
Budget Officers	AWPS provides contemporaneous information on budget formulation and execution, as well as a powerful simulation capability to test alternative budget and financing plans.
Senior decision makers at AMC and Army HQs	AWPS provides roll-up visibility of performance at subordinate organizations; future developments will provide additional executive decision support and simulation capability to test alternative resource allocation strategies and budget decisions.

AWPS creates tools that will enable the ongoing process of Army transformation – as summarized in the following table.

Best practices	Allows successful processes to be shared across the organization –

	identify outliers – provide data for LEAN and 6-Sigma redesign projects
Accountability	Data visibility promotes responsibility –tie to NSPS pay for performance
Budgeting	Prioritizes work and resources, tied to outcomes
Workforce mix	Optimizes military, civilian & contracted workforces
Integration	Pulls data from across functional systems, providing new perspectives to decision makers..

AWPS has proven itself to be a critical element in Army management, as noted by the following accomplishments:

- Ammunition Production Sites are using AWPS to control the production and movement of missiles in support of operations in Iraq. The charges due to shipping and production increases are defined and the cost is known. In addition, managers can see the impact of schedule slippage on other projects.
- The AMC Federal Workforce is being tracked in AWPS to produce an integrated Workforce Management Process to ensure Army equipment and ammunition is maintained at appropriate levels.
- The link to budget development and monitoring allows AMC staff to quickly develop and evaluate proposed and actual budget changes and their impact on operations and readiness.
- AWPS forecasting methods and programming techniques have been recently used to integrate medical data for forward deployed units to produce a prototype resource forecasting tool that estimates non-battle casualties and can be used to support decision making on forward deployed medical units and the impact on medical treatment facilities.

Successful AWPS implementation in several mission areas within AMC has proven that data can be drawn from existing systems and efficiently manipulated to link personnel requirements with the work to be accomplished. In fact, over the past several years the use of AWPS has resulted in increased efficiency of operations. The development of the various AWPS components within AMC provided the basis for the implementation across the Army.

AWPS in the Army Reserve and Army National Guard

The AWPS team has begun to expand the implementation of the AWPS maintenance workload and workforce capabilities to Army Reserve and Army National Guard maintenance units. The reserve components create new and unique challenges for AWPS implementation. They are dispersed and not under the direct command of AMC. In the case of the National Guard units, state considerations also come into play. The reserve component units do not yet have the same level of automation support and centralized data and workload management as the active sites already implemented, therefore, significant up-front work will be required to bring these organizations on board.

The Army Reserve maintenance units are in the midst of a major logistics management capabilities upgrade, and expect to complete conversion to a central Oracle database solution. AWPS staff has met with the Army Reserve leadership, and have become knowledgeable on the new Army Reserve system. Once that system is in place, AWPS will be prepared to quickly develop the data strategies that will enable the Army Reserve to take advantage of the planning and management capabilities in AWPS.

The AWPS team, ARNG leadership and the maintenance manager for the Oregon Army National Guard decided to develop and test prototype AWPS applications at the Camp Withycombe facility. The National Guard sustainment sites were upgraded to the Standard Army Maintenance System - Enhanced (SAMS-E) as part of the AWPS application, AWPS has designed and is in the process of implementing at Camp Withycombe RSMS an initial solution to the data collection issue based on the deployment of handheld Scanners and a secure wireless network to collect data at the worksite. This data is uploaded to the AWPS servers providing local and higher maintenance managers a decision support capability to include personnel work loads, resources and the ability to forecast against known and funded requirements.

AWPS has been mandated by the Congress, certified by the Army Audit Agency (AAA), and designated by the Secretary of the Army as the single workload/workforce/manpower determination tool. AWPS is currently deployed across the Army Materiel Command and is being extended to maintenance functions in Army Reserve and National

Guard components as well as to other non-maintenance organizations. AWPS has been adapted from and operates in cooperation with a similar Navy methodology and process used to manage shipyard workload and workforce.

The original AWPS has evolved and developed in a number of significant ways:

- From its initial application at one depot in 1999, AWPS has now been implemented at 13 AMC facilities with a covered workforce in excess of 16,765.
- AWPS has been updated to operate in a secure web-based environment, significantly easing its use and management.
- AWPS is working with the Logistics Modernization Program to develop an interface that will enable current and future deployments of logistics enterprise software to support AWPS.
- AWPS now includes the capability to capture the base operations functions at AMC facilities – this capability will be extended to other Army bases in the future.
- Modules linking AWPS to the Army budget and manpower management systems have been implemented, significantly strengthening and streamlining the process of building and tracking budgets and performing oversight.
- Training and experience with AWPS has enhanced accountability and control at worksite and headquarters levels.

Enterprise Management Decision Support (EMDS)

The Enterprise Management Decision Support (EMDS) capability is currently being developed within **eAWPS**. EMDS is a state-of-the-art multifunctional decision support tool for senior Army leaders. It spans the Army enterprise to draw data from systems of record into a web-based environment designed to readily provide decision-making information. The core capabilities include:

- Integration of requirements, capabilities, outputs, and budget information – EMDS provides a consolidated view into the inputs, outputs and process capabilities needed to support workload and budget decisions. EMDS aligns Army strategy, goals, and enterprise-wide business processes with the requirements and performance of the sustaining and fighting forces.
- Linkage of programmed and actual resource allocations with programmed and actual outputs – EMDS enables the Army to measure the contribution of the sustaining force to the capabilities and success of the fighting force. EMDS enables the Army to respond to program and/or resource changes knowing the impact and risk associated with those changes.
- Generation of user-defined scenarios to measure effects of various planning options – EMDS enables the user to selectively define the content they need for analysis and/or decision making. It provides more effective resource planning, programming, and budgeting by creating a "what if" environment to develop alternative program priorities and funding levels.

Providing decision-support options based on actual or scenario-driven data and events – EMDS transforms Army data into information that will efficiently drive Army leadership to consistent and output-oriented outcomes. EMDS decision-support identifies Lean-Six Sigma opportunities and their contribution to process and organizational improvement.

As the Army transforms to a force designed for continuous operations in a new era of risks, it must also transform its support operations to provide the proper forces and capabilities to Combatant Commanders. Current Army systems and tools were not designed to support the new modular force structure and Army Force Generation (ARFORGEN) model, and the ERP replacements are not yet in production. The EMDS core capability is designed to integrate those processes and data to quickly meet Army priorities.

This modular approach will allow Army leadership to quickly provide transformational support across multiple functional areas to include: Human Resources, Medical, Training, Installation Management, and Logistics while building an integrated tools suite to ensure continuous improvement.

Resource Management Tool (RMT)

The Resource Management Tool (RMT) tool is a web-based resource management solution which further enables the Army Resource Managers to efficiently interface between the Army Planning, Programming, Budgeting, and Execution (PPBE) tools in order to execute mission and decision making processes in a real-time environment.

RMT provides a portal to make PPBS work more efficient (less costly and easier) and more effective (fewer errors). The tool provides a low cost, bolt-on solution to a broad community including resource and program managers. RMT allows these managers to plan, program, budget and execute Army funding in a tightly integrated manner at multiple organizational levels while simultaneously improving the utilization of available funding and the quality of financial and program management records. RMT is provides the Army with information needed to execute mission and decision-making processes in a real-time environment. RMT will:

- Eliminate the requirement to input duplicate data into multiple systems
- Streamline processes in a manner that will enhance productivity
- Significantly reduce errors

Work Mapping Tool (WMT)

The Work Mapping Tool (WMT) establishes projects and work breakdown structures (WBS), links budget with time attendance data, records status, and produces outcome reporting. The concept of operations starts with the Army Budget process, in which RMT receives and distributes the authorized budget to subordinate organizations and functions. Managers will then use WMT capability to link these budgets with work breakdown structures into product lines, products, projects, deliverables, services, and tasks. In addition, WMT links the work to the time collection system creating a single thread from budget to planned work to accomplished work. The software is flexible so that each organization and function may choose the level of detail it needs to work with.

For selected products/projects, a lower level of breakdown can be developed to allow for data collection (time and outcome counts). In this case, **AWPS** sends the collected data to the Automated Time and Attendance Production System (ATAAPS) for certification. Not all organizations are required to use this lower level of cost/count collection. This allows the Army to implement the WMT management portion of **eAWPS** in a phased approach while still having total budget visibility. WBS management through the use of the WMT module can be implemented following organizational changes, work function reviews, and prior to major LEAN/SixSigma events. WMT has been in use within IMCOM since 10 October 2007.

The Strategy For Future Implementation

The Army is planning significant enhancements to functionality of eAWPS components and coverage, and in doing so is broadening the capability such systems provide Army leaders. Future capabilities will enhance budget building, execution and monitoring, and strengthen the utility of AWPS for senior decision makers. Additional AWPS functions will be implemented, including medical, base operations, and headquarters functions.

The implementation of **eAWPS** components to date has been on a deliberate schedule. Each substantive application has been carefully studied to determine the availability of the required data and the data flows before the commitment of resources to install the system. Each application has been supported during the initial implementation and data "clean up" phases. Training of users has been extensive. This careful and deliberate implementation approach has led to AWPS' success. The strategy for the continued **eAWPS** implementation into new organizations during the next several years, including its new broader transformation agenda, will follow the same basic approach.

Implementing **eAWPS** across all business mission functional areas has been assigned to project teams with specific products, acting in a synergistic fashion, and integrated product development. The project teams are managed independently with respective scopes, integration activities, project management plans, schedules, budgets and product approvals. To assure integration of these projects, the Program Manager, along with the Program Management Team (PMT) and the **eAWPS** Product Manager (PDM) provide oversight, guidance and direction for each project team.

Enterprise AWPS and Human Capital Planning

The President's Management Agenda requires every department and agency to develop and implement a human capital strategy. The most important aspects of this strategy are an analysis of the future labor needs of the organization and the articulation of policies and programs to achieve that future workforce. Depicting the future workforce requires an organization to identify its future work, the skills and capabilities of the personnel who will accomplish that work, and the gap that exists between the current workforce and the future workforce. Only then can the agency begin to develop plans and programs to either change the nature of work that will be required in the future by

applying technology or other change levers, or by changing the ways in which the future workforce will be recruited, trained and deployed.

eAWPS can be a key component of the Army Human Capital Strategy. **eAWPS** is the most powerful tool the Army has for describing and analyzing the work and workforce currently being performed, especially in industrial-type work settings. AWPS applications in depots and repair facilities have demonstrated their ability to capture data associated with the labor (and other) production factors and to analyze and present those data in understandable and meaningful ways. From **eAWPS**, the Army will be able to estimate the size and composition (by occupation or skill) of the workforce required to accomplish defined quantities of work.

Given its ability to model the flow and process of work in a variety of work settings, **eAWPS** becomes the logical tool for the Army to use to estimate future workforce requirements. The modeling capacity built into **eAWPS** will allow future workloads to be modeled, along with new technologies and skills. The **eAWPS** analyst will be able to project how changing technology and work processes will create the workforce of the future, and be able to describe that future workforce with great precision and richness. The result is a demographic portrait that can be the basis for redesign of Army manpower, personnel and training policies and programs.

Cooperation with Department of Navy

An important aspect of the eAWPS strategy has been close cooperation with the Navy. From its origination, AWPS development and implementation has been closely associated with similar work in the US Navy, especially in the naval shipyards and in NAVSEA headquarters. This cooperation has been an asset for eAWPS in the following ways:

- The DUSA(BT) is working closely with the office of the Assistant Secretary of the Navy (M&RA) to develop joint and cooperative programs to continue WPS development and applications. The two offices sponsored a symposium on workforce planning in March 2006 and are in the process of developing a broader MOU between the two departments to further exploit their common interests and resources.
- A joint effort with the Navy Post Graduate School and the Defense Manpower Data Center is developing a more powerful workforce aging model to improve forecasting accuracy in both Army and Navy applications.
- Lessons learned from Navy development and implementation has made design and implementation of Army applications easier and enabled growth of skilled program teams. As **eAWPS** applications are developed and fielded, the Navy is also learning from the experience to enhance Navy implementation in its own WPS. Navy is expanding WPS capability across logistics functions. As those are completed, Army will examine them for use at Army workcenters and organizations that perform similar functions.
- Software development costs are shared with Navy – cost is shared and reusable following best DoD practice.
- Running both Army and Navy systems at Naval Sea Logistics Center – Pacific has allowed significant savings on hardware and staffing, and provided enhanced capability.

Conclusion

The Army has demonstrated that the Army Workload and Performance System can be very powerful in the matching of personnel requirements to the work to be performed. For example, **AWPS and RMT** are being employed as a daily management tool at many locations and have demonstrated its use can result in more efficient operations. It must be remembered that **eAWPS** is a toolbox of "applications" that are applied to various mission areas. While the basic AWPS model, for example, is the same for the different functional applications, the sources that feed data to the eAWPS toolbox and the output displays are different for each application in the toolbox. Thus, **eAWPS** is becoming a data environment in which all elements of Army business operations – requirements, budgets, human capital, resource allocation and performance measurement – are integrated to support decision making, process improvements and transformation of the Army business enterprise. The implementation of this plan will enable the Army to make significant progress in the development and defense of the civilian manpower program for the program/budget process and in longer range planning efforts such as Total Army Analysis.

eAWPS development and implementation will be closely integrated with other ongoing Business Transformation initiatives through the strengthened leadership of the DUSA(BT).

Without **eAWPS**, the Army would require multiple systems to collect and manage workload and forecasting data, making it more difficult to achieve total asset visibility, thus negatively impacting current and future operations, and creating difficulties in program oversight and critical components required for strategic and operational level decision support.

eAWPS will be a core component of the Army Human Capital Strategy. eAWPS will allow the Army to more closely match scarce and expensive manpower to the most important work as the Army transitions to its new, forward-leaning force structure. eAWPS performance measures can be the core of pay-for performance required under the new National Security Personnel System (NSPS). eAWPS data and methods are critical to streamlining the War fighting Support Army – freeing resources for investment in assets required for deployable units and increasing effectiveness of the support elements